

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

1. (Currently Amended) A wireless device, comprising:

a wireless interface configured to provide short range and low power interface for supporting communication across a wireless connection used for a negotiation service to select a communication interface,

wherein the short range and low power interface provides reliable signal and reduced power consumption for negotiation;

a first communication interface for providing a medium range wireless interface;

a second communication interface for providing a wired interface; and

a controller connected to said wireless interface, said controller supporting the negotiation service and a communication service;

wherein said negotiation service provides interface negotiation for using said wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device,

wherein said negotiation service selects one of: (1) said first communication interface for direct communication between the wireless device and said another device, and (2) said second communication interface for indirect communication through a network,

wherein said first communication interface is a separate interface from said wireless interface used for interface negotiation, ~~and~~

wherein said communication service provides control and management of communication with said another device across a connection established using said negotiation service, and

wherein a first connection opened using said negotiation service and said wireless interface is kept open while a second connection opened using said communication service and one of said first communication interface and said second communication interface is open so that said first connection is used to adjust the operation of said second connection.

2. (Previously Presented) The wireless device of claim 1, wherein:
said wireless interface supports Bluetooth.

3. (Canceled)

4. (Previously Presented) The wireless device of claim 1, wherein:
said first communication interface supports Wi-Fi.

5. (Previously Presented) The wireless device of claim 1, wherein:
each of said wireless interface and said appropriate communication interface support respective types of wireless communication.

6. (Canceled)

7. (Previously Presented) The wireless device of claim 1, wherein:

said appropriate communication interface provides a higher data rate than said wireless interface.

8. (Previously Presented) The wireless device of claim 1, wherein:

said appropriate communication interface uses more power than said wireless interface.

9. (Canceled)

10. (Original) The wireless device of claim 1, wherein:

said negotiation service provides interface negotiation automatically.

11. (Original) The wireless device of claim 10, wherein:

said negotiation service provides interface negotiation in response to a request by a user.

12. (Previously Presented) The wireless device of claim 10, wherein:

said negotiation service selects said appropriate communication interface without user input.

13. (Previously Presented) The wireless device of claim 10, wherein:

said negotiation service selects said appropriate communication interface using settings previously provided by a user.

14. (Original) The wireless device of claim 1, wherein:

said wireless interface supports a direct connection to said another device.

15. (Original) The wireless device of claim 14, wherein:

said direct connection is a newly established ad hoc network established with said another device.

16. (Canceled)

17. (Original) The wireless device of claim 1, wherein:

said wireless interface supports receiving a beacon signal from a beacon source, and
said negotiation service uses said beacon signal to open communication.

18. (Original) The wireless device of claim 17, wherein:

said beacon signal indicates said another device as a target device and a target interface,
and

said another device is different from said beacon source.

19. (Currently Amended) A method of interface negotiation, comprising:

configuring a default wireless interface as short range and low-power interface;
searching for a second device using the default wireless interface of a first device;
establishing a negotiation connection between said first device and said second device
using said default wireless interface,

wherein the short range and low power interface provides reliable signal and reduced power consumption for the negotiation connection;

negotiating to select an appropriate communication interface for communicating data between said first device and said second device using said negotiation connection, and to investigate information and capabilities of said second device,

wherein selecting an appropriate communication interface includes selecting one of:

(1) a first communication interface for direct connection between the first device and the second device, and (2) a second communication interface for indirect connection through a network,

wherein said communication interface is a separate interface from said default wireless interface used for providing negotiation connection;

establishing a communication connection using said selected communication interface;

communicating data between said first device and said second device using said communication connection,

wherein said negotiation connection is open while said communication connection is open so that said negotiation connection is used to adjust the operation of said communication connection, and information on said negotiation connection is used to determine when to close the communication connection; and

closing said communication connection when the determination is made.

20. (Original) The method of claim 19, further comprising:

searching for said second device using a secondary interface.

21. (Canceled)

22. (Previously Presented) The method of claim 19, wherein negotiating to select an appropriate communication interface includes:

determining one or more available interfaces;

determining one or more compatible interfaces from among said one or more available interfaces; and

selecting one of said one or more compatible interfaces as said communication interface using one or more communication criteria.

23. (Original) The method of claim 22, wherein:

said communication criteria include data rate and power use.

24. (Previously Presented) The method of claim 22, wherein negotiating to select an appropriate communication interface also includes:

selecting a communication mode.

25. (Original) The method of claim 24, wherein:

said communication mode indicates whether to use a direct connection between said first device and said second device or an indirect connection between said first device and said second device for said communication connection.

26. (Original) The method of claim 24, wherein:

said communication mode indicates a type of encryption to use for said communication connection.

27. (Original) The method of claim 19, further comprising:
receiving a beacon signal from a beacon source at said first device; and
determining a target device and a target interface using said beacon signal;
wherein said target device is said second device and said target interface is said default interface.

28. (Original) The method of claim 27, wherein:
said target device is different from said beacon source.

29. (Currently Amended) A system for interface negotiation, comprising:
means for configuring a default wireless interface as short range and low-power interface;
means for searching for a second device using the default wireless interface of a first device;

means for establishing a negotiation connection between said first device and said second device using said default wireless interface,

wherein the short range and low power interface provides reliable signal and reduced power consumption for the negotiation connection;

means for negotiating to select an appropriate communication interface for communicating data between said first device and said second device using said negotiation connection, and to investigate information and capabilities of said second device,

wherein selecting an appropriate communication interface includes selecting one of:

(1) a first communication interface for direct connection between the first device and the second device, and (2) a second communication interface for indirect connection through a network,

wherein said communication interface is a separate interface from said default wireless interface used for providing negotiation connection;

means for establishing a communication connection using said selected communication interface;

means for communicating data between said first device and said second device using said communication connection,

wherein said negotiation connection is open while said communication connection is open so that said negotiation connection is used to adjust the operation of said communication connection, and information on said negotiation connection is used to determine when to close said communication connection; and

means for closing said communication connection when the determination is made.

30. (Original) The system of claim 29, further comprising:

means for determining one or more available interfaces;

means for determining one or more compatible interfaces from among said one or more available interfaces; and

means for selecting one of said one or more compatible interfaces as said communication interface using one or more communication criteria.

31. (Original) The system of claim 30, further comprising:

means for selecting a communication mode.

32. (Original) The system of claim 29, further comprising:

means for receiving a beacon signal from a beacon source at said first device; and

means for determining a target device and a target interface using said beacon signal;

wherein said target device is said second device and said target interface is said default interface.

33. (Currently Amended) A computer-readable storage medium including a computer program for use in interface negotiation, the program comprising executable instructions that cause a computer to:

configure a default wireless interface as short range and low-power interface;

search for a second device using the default wireless interface of a first device;

establish a negotiation connection between said first device and said second device using said default wireless interface,

wherein the short range and low power interface provides reliable signal and reduced power consumption for the negotiation connection;

negotiate to select an appropriate communication interface for communicating data between said first device and said second device using said negotiation connection, and to investigate information and capabilities of said second device,

wherein selecting an appropriate communication interface includes selecting one of:

(1) a first communication interface for direct connection between the first device and the second device, and (2) a second communication interface for indirect connection through a network,

wherein said communication interface is a separate interface from said default wireless interface used for providing negotiation connection;

establish a communication connection using said selected communication interface;

communicate data between said first device and said second device using said communication connection,

wherein said negotiation connection is open while said communication connection is open so that said negotiation connection is used to adjust the operation of said communication connection, and information on said negotiation connection is used to determine when to close said communication connection; and

close said communication connection when the determination is made.

34. (Previously Presented) The wireless device of claim 17, wherein the beacon source broadcasts the beacon signal using a short-range wireless interface, such that said wireless interface configured as short range and low-power interface can receive the beacon signal to be used in said negotiation service.

35. (Previously Presented) The wireless device of claim 34, wherein the beacon signal includes information indicating a resource and connection information for accessing that resource.

36. (Previously Presented) The wireless device of claim 35, wherein the connection information includes information that indicates a target device, a target interface, and details on how to set up a connection to the target device through the target interface.

37. (Previously Presented) The wireless device of claim 34, wherein the beacon signal includes information for multiple resources or connections to indicate that a particular data file can be accessed through a connection.

38. (Previously Presented) The wireless device of claim 17, wherein the beacon signal is supplied upon request such that when the wireless device enters the range of the beacon source, the device informs the beacon source of the device's presence and the beacon source sends the beacon signal to the wireless device.